

Application No. 10/678,045
Reply dated August 17, 2005
Response to Office Action dated May 17, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method of ~~processing~~ removing an oxide film on a surface of a substrate, comprising the steps of:

providing hydrogen radicals to [[a]] the surface of the substrate;

providing fluorine radicals to the surface of the substrate; and

removing the oxide film by processing the surface of the substrate with the hydrogen radicals and the fluorine radicals, wherein

the step of providing hydrogen radicals and the step of providing fluorine radicals are performed in parallel, and the step of providing hydrogen radicals is terminated after the step of providing fluorine radicals is terminated.

2. (currently amended) The method as claimed in claim 1, wherein the hydrogen radicals are generated ~~in a step of~~ by exciting hydrogen gas with high frequency plasma.

3. (original) The method as claimed in claim 2, wherein the hydrogen radicals are generated outside a processing space in which the substrate is retained, and are transported to the processing space.

4. (currently amended) The method as claimed in claim 1, wherein the fluorine radicals are generated ~~in a step of~~ by exciting fluorine gas with ultra violet rays.

5. (original) The method as claimed in claim 4, wherein the fluorine radicals are generated in a processing space in which the substrate is retained.

6. (cancelled)

7. (currently amended) The method as claimed in ~~claim 6~~ claim 1, wherein the step of providing the fluorine radicals is begun after the step of providing the hydrogen radicals is begun.

8. (cancelled)

9. (currently amended) ~~The method as claimed in claim 1, further comprising the step of~~ A method of removing an oxide film on a surface of a substrate, comprising the steps of:

providing hydrogen radicals to the surface of the substrate;

providing fluorine radicals to the surface of the substrate;

providing water vapor to the surface of the substrate; and

removing the oxide film by processing the surface of the substrate with the hydrogen radicals and the fluorine radicals.

10. (currently amended) The method as claimed in ~~claim 1~~ claim 9, ~~further comprising the step of:~~

~~providing water vapor to the surface of the substrate;~~

wherein

the step of providing [[the]] hydrogen radicals and the step of providing [[the]] fluorine radicals are performed simultaneously in parallel; and

the step of providing hydrogen radicals and fluorine radicals in parallel and the step of providing water vapor are performed alternately alternatively and repeatedly performed.

11. (currently amended) The method as claimed in claim 10, wherein [[the]] a processing space in which the substrate is retained is purged with inert gas after the step of

providing water vapor and before the step of providing hydrogen radicals and fluorine radicals in parallel.

12. (withdrawn) An apparatus for processing a substrate, comprising:

a processing vessel that is vacuated at a first end, said processing vessel provided with a mount on which the substrate is retained,

a remote plasma source provided at a second end of said processing vessel;

a processing gas port provided at the second end of said processing vessel;

a ultra violet light source formed between said processing gas port and the substrate, said ultra violet light source provided on said processing vessel;

a hydrogen providing line connected to said remote plasma source; and

a fluorine providing line connected to said processing gas port.

13. (withdrawn) The apparatus as claimed in claim 12, wherein the mount has a mechanism for rotating the substrate.

14. (withdrawn) The apparatus as claimed in claim 12, wherein a water vapor providing line is provided to the second end of said processing vessel.